





## A CASE OF FOOT AND MOUTH DISEASE IN THE HUMAN SUBJECT.

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IN view of the increased attention which is being paid in these days to the diseases of the lower animals which are communicable to man the following notes respecting an attack of the above disease in the human subject will not prove uninteresting to the readers of *THE LANCET*. Such cases are comparatively rare, and by reason of their rarity ought to be carefully recorded when encountered. The literature, too, of the affection is by no means copious, although it is sufficiently large to prove what is now unquestioned—that it is a disease which under certain conditions is communicable from the lower animals to man, while it leaves open to doubt its communicability from man to man. The facts of the case which came under my observation were as follows.

In December of last year I was asked to see a woman aged forty-four years. She was a person who usually enjoyed vigorous health. Her symptoms of illness at that visit were the following: She had a history of a rigor, a febrile condition (temperature  $102^{\circ}$  F.), a dry, furred tongue, anorexia, considerable thirst, and a general feeling of soreness of the muscles of the trunk and limbs. The room in which she lay was darkened on account of conjunctivitis of both eyes causing her to be unable to bear the light. In addition, she suffered from coryza to a slight degree and from a trifling cough. On the face and neck there was the faintest appearance of a rash, which looked not unlike the initial stage of the eruption of measles. In short, all her symptoms pointed to an attack of ordinary measles, which, however, she assured me she had had upon a former occasion. Next day the conjunctivitis had considerably increased and the conjunctivæ were beginning to assume a tumid appearance; the coryza also had increased and the nasal mucous membrane was also somewhat swollen. She complained of tenderness upon micturition. The appearance of rash on the face and neck had now nearly cleared off. The temperature was now  $102.6^{\circ}$ . She had had a sleepless night, and she was

very nervous. The most prominent symptom observable at this visit, and one of which she had not formerly complained, was a painful condition of the mouth, of which upon examination the whole of the mucous membrane was found to be in an inflamed and tumified state. It had just the appearance as if it had been painted over with blistering fluid or as if she had washed her mouth with strong carbolic acid. This inflamed condition extended over the lips to the margin of the skin. In consequence of the tongue having shared the same inflamed and swollen state her articulation was difficult and thick, and the act of swallowing fluid had become both painful and difficult. A rash had now begun to show itself on the forearms, which consisted of circular and oval spots slightly raised above the level of the skin (papules). These papules were comparatively few in number, and in respect of their position did not extend above the lower half of each forearm. In addition to this an unusual rash made its appearance on the palms of the hands and on the soles of the feet, which confined itself exclusively to these parts, there being, however, an occasional spot on the palmar aspect of the webs of the fingers and on the plantar aspect of the webs of the toes. But the incidence of the eruption on the palms and soles was the striking feature of it. The rash was composed of circular papules of a pinkish colour, which did not disappear on pressure. This undoubtedly indicated a purpuric character. This colour was not shared by the rash on the forearms, neither was any rash on any other part of the body. The whole symptoms—the fever, the conjunctivitis with profuse watery discharge, the inflamed condition of the nasal mucous membrane (also with profuse coryza), the generally inflamed and tumid condition of the mucous membrane of the mouth and tongue, and the peculiar character and incidence of the eruption—did not consort with those of any disease I had met with in the human subject during about twenty years' experience in practice, and, consequently, at first were puzzling. I had apparently to deal with stomatitis of a peculiar kind with superadded symptoms of a kind unknown to me. Suspicion soon fell upon foot and mouth disease, particularly after consultation with some experienced veterinary practitioners who had had considerable experience of the disease in the lower animals. Inquiry was thereupon made regarding the patient's connexion with cattle, but there was found to be not any. She, however, pointed out that she lived very largely upon raw milk—in fact, she daily consumed considerable quantities

of that fluid. From this point onward the daily history showed increasing disturbance of the conjunctivæ, increased inflammatory action in the buccal mucous membrane, and changes in the appearance of the rash. The febrile condition remained active until the fourteenth day, although the forenoon temperature never rose above  $102.5^{\circ}$ , when it gradually subsided to about  $100^{\circ}$  or  $100.5^{\circ}$ , depending apparently upon the condition of the mouth. It disappeared entirely about the twenty-first day. The history of the conjunctivitis can be summed up in a few words. The patient was completely unable to bear the light until the tenth day of the illness, when the inflammatory action began to decline, and by the fourteenth day it had practically disappeared. From the time that the generally blistered-looking condition of the mucous membrane made its appearance, swelling of the cheeks ensued, and more particularly of the left side, although the blistered condition was equally apparent on both sides. When these vesicles became ruptured their bases appeared angry and raw, and upon these bases ulcers of varying size and depth supervened. As was probably to be expected, the ulcers on the lips were the most painful and most difficult to heal; at the same time several of those in the interior of the mouth were equally long in healing, particularly those situated on a line of the buccal membrane at which the teeth of both jaws met. These ulcerations were not entirely better until the end of the fifth week of the illness. With regard to the subsequent behaviour of the rash, that part upon the forearms which became papular remained in this condition for about two days, whereupon some of the papules gradually assumed the form of vesicles which, soon afterwards subsided after absorption of the fluid, and from which the epidermis peeled off, or, in some few cases, the clear fluid of the vesicles became purulent in character, but which also became absorbed, a little desquamation ensuing. The rash upon the palms and soles behaved in a very similar way, but the process of conversion from papule to vesicle, and from vesicle to pustule, extended over a larger number of days, not unlikely due to the more thickened condition of the epidermis over these parts. The pinkish colouration of the spots at first was very striking, but it disappeared when the papule became a vesicle. The conversion above alluded to was more general in the rash of the palms and soles than in that of the forearms; and, as in the case of the forearm rash, so here, after absorption of the fluid contents, desquamation of the skin

ensued. The process of desquamation was not active until about the end of the fifth week of the illness; neither was it general over the skin of the hands or feet. There was no internal complication in the case, so that by the end of the fourth week the patient was able to be out of bed for an hour or two; but even at the end of the sixth week she was not able to attend to her ordinary domestic duties. As the case had a distinctly public health relation, I requested Dr. J. B. Russell, senior medical officer of health of Glasgow, to see the case with me while in its acute stage. He agreed as to the diagnosis. He was good enough to make enquiries regarding the milk supply of the family of the patient, but found himself hopeless to trace its ultimate source. The patient has been in good health ever since.

This disease—foot and mouth disease—known also by the synonyms “epizootic vesicular stomatitis”<sup>1</sup> “apha epizootica,” and “vesicular murrain,”—has, as already has been remarked, but a limited literature, whether in this country or abroad, although more attention has been paid to its attacks on man in continental than in home literature. Hirsch dismisses the subject in five pages. He attributes the first record of it to Sagar, an Austrian physician, who gave an account of a seizure in Moravia in 1764. Cases were common in the human subject in Germany during the epidemic of the disease amongst cattle in 1838. Hirsch believes that the paucity of recorded cases is due to want of knowledge of the appearances of the disease in the human subject on the part of the general practitioner and to the classification of the malady under other miscellaneous names, if not, indeed, to want of naming altogether. The *materies morbi* may be transmitted to man either from the products of the cow—milk, butter, or cheese—or from its absorption into the body of man by some accidental raw surface from the discharges—buccal and nasal—of the animal. While there is good reason to believe that the disease has a microbic origin, and while, so far as we know, the specific micro-organism has not been isolated, Hirsch makes the following statement—viz., that “no reproduction of an infective substance capable of acting upon others appears to take place in the body of man; at least, no instance is known of the disease being communicated from man to man.” It would appear from a careful examination

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<sup>1</sup> Hirsch's Geographical and Historical Pathology, vol. iii., p. 241. Sydenham Society's Edition.

of several of the recorded cases that the symptoms of the disease may be resolved into three main lines—viz., the general constitutional symptoms which usually accompany all febrile diseases, the affection of the mucous membranes, and, lastly, the cutaneous eruptions. Of the first, nothing need be added. Of the second, all that requires to be said is that the burden of the disease falls chiefly upon the membrane of the gastro-intestinal tract, although other tracts may also be more or less involved. In respect of the last, observation has abundantly showed that the cutaneous eruption may differ both as to its nature and as to its incidence. In one case recorded by Bircher<sup>2</sup> the rash covered the whole body. Usually, however, it is confined to the hands and feet, but it is found less frequently on the latter than on the former. The progress of the eruption is as has been already described.

In the *Edinburgh Medical Journal* for February, 1863,<sup>3</sup> Dr. G. W. Balfour of Edinburgh gives an erudite account of this disease. His communication was based upon the notes of two cases which had been sent to him for communication to the Medico-Chirurgical Society of that city by Mr. Hislop, a surgeon of Renfrewshire. These cases were those of a farmer and his wife, who were daily engaged in the dairy occupations of the farm. At the time of the attack the cows of this man's farm were ill with "vesicular murrain"—by which name the disease was known at the time—and the farmer attributed his attack to the fact that while examining the mouth of one of the affected cows, some of the pimples on its lips burst and the contained fluid was ejected over his face and hands. These cases are of considerable interest and they possess several features in common with the foregoing case. For example, the wife of the farmer suffered from conjunctivitis in both eyes; in both the farmer and his wife the eruption began as "bright-red spots, one-eighth of an inch in diameter;" and in both the buccal mucous membrane was much involved. But in neither of these cases did the eruption become vesicular, thereby differing from the foregoing case, although the general progress of the eruption was otherwise much the same—"slightly elevated reddish prominences (papulæ) which gradually became bright red, then threw off a thin silvery-like scale, and again gradually disappeared." There can be little doubt that the disease

<sup>2</sup> Correspondenzblatt für Schweizer Aerzte, 1872, p. 123.

<sup>3</sup> Vol. viii., Part 2, pp. 704, *et seq.*

from which this farmer and his wife suffered was foot and mouth disease, although the *British Medical Journal* <sup>4</sup> concluded from the nature of the rash and the effect of mercurial treatment that the disease was not derived from the affected cows. Again, in the medical journal just quoted <sup>5</sup> notes of twenty-two cases communicated to the human subject are given, in which the symptoms found divided themselves into two classes—viz., those with fever accompanied by constitutional symptoms only, and those with fever coupled with constitutional symptoms and rash on the hands and feet together with mouth ulceration. There is a further account in the same journal for 1875 <sup>6</sup> of cases observed in Morayshire.

But little remains to be said regarding treatment. Believing, as I did, that the disease was of microbic origin dilute solutions of permanganate of potash and sanitas were used frequently as mouth washes, while small doses of quinine were administered internally. Nourishment in liquid form and in small quantities was freely given.<sup>7</sup>

Glasgow.

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<sup>4</sup> Brit. Med. Jour., vol. ii., 1869, p. 542.

<sup>5</sup> Ibid., vol. ii., 1869, p. 536.

<sup>6</sup> Ibid., vol. ii., 1875, p. 652.

<sup>7</sup> Cases of this affection in human beings were reported in THE LANCET, vol. i., p. 901, and vol. ii., p. 1355, for 1895.—ED. L.











